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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,322	10/22/2003	Roland Starck	CU-3411 RJS/BSE	5920

26530 7590 04/20/2004

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EXAMINER

PATEL, VINOD D

ART UNIT PAPER NUMBER

3742

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/691,322

Applicant(s)

STARCK ET AL.

Examiner

Vinod D. Patel

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,13-15,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 8,10-12,16,17 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/22/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED OFFICE ACTION**

### **INTRODUCTION**

1. This application/control number 10/691,322 has been examined. This is the first action on the merits of the claimed invention. The application has claims 1-20 pending.

#### ***Specification***

2. The disclosure is objected to because of the following informalities:

Heading must be provided for each respective section of the specification (e.g. BACK GROUND OF THE INVENTION, BRIEF SUMMARY OF THE INVENTION, BRIEF DESCRIPTION OF THE DRAWINGS, DETAILED DESCRIPTION OF THE INVENTION, ETC.).

Specification should not depend on the claim since claim can be amended. Present description depends on the claim description at numerous places e.g. page 1, line 2, page 2, line 9 and page 3, line 23-24.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 6 recites the limitation "regularly" in line 2. Page 2 of the specification uses the word "uniformly". Replace "regularly" with "uniformly" to overcome the objection.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 9, 13-14 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pirotte (US4147927) in view of Heat Exchanger Design (page no. 33, 347, 352).

Pirotte discloses electric heating arrangement (Fig. 1-5) having a tubular housing (6, 7) in which is provided PTC heating elements (1, 2, 3) and at least one pair of metallic heat dissipators (4, 5 or 11, 12) between which the at least one heating element is clamped and which for this purpose each comprise a flat base portion (4A, 5A or 11A, 12A) facing the at least one heating element and one or two curved legs (5A, 5B or 11B, 11C, 12B, 12C) projecting from the base portion, which adapt themselves resiliently to the inner surface of the surrounding wall of the housing (col. 2, line 25-26). The metal bodies consist of aluminum or copper or an alloy of these metals with another or other metals (col.2, line 27-32). The base portion (e.g., 11A) has a uniform thickness & therefore also has the greatest thickness in the middle between the legs projecting from it. Figure 3 shows the legs together cover almost the whole inner surface of the surrounding wall of the housing.

Pirotte does not show tapered legs and base portion thicker than the legs.

Heat Exchanger Design (Page 33) discloses the taper fin is more efficient and (Figure H7.3, page 352) shows efficiency of axial fins where the fin thickness  $y$  varies or tapers with the distance  $x$  from the root of the fin.

It would have been obvious to provide a tapered leg and therefore make the base portion thicker than the legs as taught by the Heat Exchanger Design for the electric heat arrangement of Pirotte to provide efficient fins and reduce the cost of the material.

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As for claims 4-6, Figure H7.3 discloses uniformly tapering from free end.

It would have been obvious to provide a uniformly tapering free end as taught by the Heat Exchanger Design for the electric heat arrangement of Pirotte to provide efficient fins and reduce the cost of the material.

As for Claim 14, Pirotte discloses the heat dissipators are made of a profile material. There is no discussion that the material is extruded. However, such a limitation is product by process limitation. Pirotte discloses substantially the identical structure as the recited heat dissipator. In the alternative, it would be obvious to one skilled in the art to make the dissipators from extruded profile to simplify or to reduce the cost of manufacturing process.

As for claim 18, Pirotte discloses the housing comprises two layers (6,7). Layer (7) is made of metal such as copper (col. 3, line 21-25) to ensure a proper axial heat transport but does not disclose stainless steel. Stainless steel would be another metal known to a skilled artisan in the electric heater art to ensure proper axial heat transport.

It would have been obvious to one of ordinary skill in the art to use stainless steel for the housing of Pirotte to ensure proper axial heat transport.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pirotte (US4147927) & Heat Exchanger Design (page no. 33, 347, 352) in view of Ritt (US4763102).

Pirotte discloses an open-end housing (6, 7), which can be closed with seal (8) but does not disclose integrally formed flanges.

Ritt discloses a heater (10) having a body (12) that holds the leads and a heating element (60); the body has an integrally formed flange (22), which can be closed after assembly through seal (24).

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It would have been obvious to one of ordinary skill in the art to include the housing of Pirotte with an integrally formed flange with rib in order to retain and center the seal in the housing of Pirotte (Col2, line 28-37).

*Allowable Subject Matter*

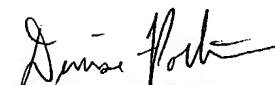
7. Claims 8, 10-12, 16-17 and 20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinod Patel whose telephone number is 703-308-5227. The examiner can normally be reached at 7.30 A.M. TO 4.00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Pothier can be reached at 703-308-0265. The fax phone numbers for the organization where this application or proceeding is 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

VP



Vinod Patel  
Patent Examiner  
Art Unit 3742



**DENISE POTHIER**  
**PRIMARY EXAMINER**